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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/656,673

09/05/2003

Stephen Neil Vaughn

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23455

7590

02/09/2006

EXXONMOBIL CHEMICAL COMPANY  
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EXAMINER

RODRIGUEZ, JOSEPH C

ART UNIT

PAPER NUMBER

3653

DATE MAILED: 02/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/656,673	Applicant(s) VAUGHN ET AL.	
	Examiner Joseph C. Rodriguez	Art Unit 3653	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 22 November 2005.
- 2a) ☒ This action is FINAL.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-15 and 19-114 is/are pending in the application.
- 4a) Of the above claim(s) 23-103 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15, 19-22 and 104-109 is/are rejected.
- 7) ☒ Claim(s) 110-114 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 9/5/03 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>9/5/03</u> . | 6) <input type="checkbox"/> Other: _____  |

***Final Rejection***

Applicant's arguments filed 11/22/05 have been fully considered but they are not persuasive for reasons detailed below.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-15 and 19-22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation "the disengaging unit" (ln. 10-11). There is insufficient antecedent basis for this limitation in the claim.

The prior art rejections are maintained or modified as follows:

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-14, 19 and 104-109 are rejected under 35 U.S.C. 103(a) as being unpatentable over Goeke et al. ("Goeke")(US 4,302,565) and in view of Fisher-Klosterman ("Fisher") (as cited on attached PTO-892).

Goeke (Fig. 1) teaches a process for selectively removing large catalyst particles from a reaction system comprising the steps of:

feeding a plurality of catalyst particles into the reaction zone (near 30, 32; col. 11, ln. 5-10);

contacting the plurality of catalyst particles with an oxygenate feedstock in the reaction zone under conditions effective to convert at least a portion of the feedstock to light olefins product (col. 10, ln. 8 et seq., col. 13, ln. 64 et seq.; see also examples);

separating at least a portion of the plurality of catalyst particles from a disengaging zone (14; col. 10, ln. 42-62) of the reaction zone to a separation unit (22), wherein the portion of the plurality of catalyst particles has a first median particle diameter (col. 7, ln. 44-68);

separating the portion of the plurality of catalyst particles in the separation unit into a small catalyst stream and a large catalyst stream, wherein the small catalyst stream has a second median particle diameter less than the first median particle diameter (implicit from cyclone structure and function that particles exiting top of cyclone are fines and that particles exiting bottom are coarse particles); and

directing at least a portion of the small catalyst stream to the reaction system (see recycling path from fines exit on top of cyclone 22 to filter 24 to compressor 25 to heat exchanger/stripper 26). Here, it is noted that since the reaction system is a loop,

particles leaving the stripper or compressor can be regarded as being directed to the separation unit.

Here, it is implicit from the catalyst particle ranges taught by Goeke (col. 7, ln. 44-68 teaching ranges from 10-250 microns) and from the variety of reduced catalyst particle sizes caused by the reaction chamber that the claimed ranges are anticipated.

Goeke as set forth above thus teaches all that is claimed except for expressly teaching the separation unit comprising a counter-flow cyclone separator using a turbulizing stream, wherein a flow rate of a gas stream to the separator is modulated to vary a cut point of the catalyst particles. Fisher, however, teaches a counter-flow cyclone that modulates gas flow, wherein it is implicit from the placement of the gas flow input that a turbulizing stream is created (see Fisher, p. 1, 2). Moreover, Fisher teaches that modulating the gas stream allows one to better control the separation sizes in the separator as well as the degree of classification (Id.). Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the invention of Goeke as taught by Fisher above to better achieve a desired separation size and efficiency.

### ***Response to Arguments***

Applicant's arguments that the prior art fails to teach the claimed features are unpersuasive in view of the newly formulated prior art rejections presented above. Consequently, the claims stand rejected.

### ***Allowable Subject Matter***

Claims 15 and 20-22 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Claims 110-114 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### ***Specification***

With respect to the previous objection, Examiner notes that the pertinent part of the objection to the abstract, reproduced below, was italicized. The objection stands.

The language should be clear and concise and should not repeat information given in the title. *It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.*

### ***Election/Restrictions***

This application contains claims 23-103 drawn to an invention nonelected with traverse in the reply filed on 8/03/05. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

With respect to Applicant's repeated contentions that the restriction is improper, Examiner reiterates that Applicant has claimed multiple claim groupings spanning over

100 claims and numerous classes. Further, the drawings and specification teach multiple embodiments of distinct species.

Examiner has maintained the prior art rejections, statutory rejections and drawing objections as previously stated and as modified above. Applicant's amendment necessitated any new grounds of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a). The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

### ***Conclusion***

Any references not explicitly discussed above but made of record are considered relevant to the prosecution of the instant application.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Joseph C Rodriguez** whose telephone number is **571-272-6942** (M-F, 9 am – 6 pm, EST).

The **Official** fax phone number for the organization where this application or proceeding is assigned is **571-273-8300**.

The examiner's **UNOFFICIAL Personal fax number** is **571-273-6942**.

Further, information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system.

Status information for published applications may be obtained from either Private PMR or Public PAIR. Status information for unpublished applications is available through Private PMR only.

For more information about the PAIR system, see

<http://pair-direct.uspto.gov>

Should you have questions on access to the Private PMR system, contact the Electronic Business Center (EBC) at **866-217-9197** (Toll Free).

Alternatively, inquiries of a general nature or relating to the status of this application or proceeding can also be directed to the **Receptionist** whose telephone number is **571-272-6584** or to the Supervisory Examiner, Kathy Matecki, **571-272-6951**.

Signed by Examiner Joseph Rodriguez

Jcr

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February 6, 2006

A large, stylized handwritten signature in black ink, likely belonging to Joseph Rodriguez, is written over the signature line and extends into the right margin.